

Serial No.: 08/896,589  
Group Art Unit No.: 1652

**In the Specification:**

Please amend the specification as follows:

At page 19, line 21, please delete "SEQ ID NO:1.1579" and insert -- SEQ ID NO:1 -- in place thereof;

line 27, please delete "58%%" and insert -- 58% -- in place thereof;

line 27, please delete "75%%" and insert -- 75% -- in place thereof.

**In the Claims:**

Please cancel claims 21-23, 27-35, 43, 47, 52-67, and 74-82 without prejudice or disclaimer.

Please amend the claims as follows.

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24. (Amended) The polynucleotide of Claim 83 wherein said first polynucleotide sequence encoding a Xanthine phosphoribosyl transferase polypeptide comprises the nucleic acid sequence set forth in SEQ ID NO:1.

25. (Amended) The polynucleotide of Claim 83 wherein said first polynucleotide sequence encoding a Xanthine phosphoribosyl transferase polypeptide comprises nucleotide from position 1 to 579 inclusive of the polynucleotide sequence set forth in SEQ ID NO:1.

26. (Amended) The polynucleotide of Claim 83 wherein said first polynucleotide sequence encoding a Xanthine phosphoribosyl transferase polypeptide encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

68. (Amended) An isolated polynucleotide of claim 30 comprising a first polynucleotide sequence encoding the same mature polypeptide expressed by the Xanthine phosphoribosyl transferase gene contained in *Streptococcus pneumoniae* 0100993 contained in

Serial No.: 08/896,589  
Group Art Unit No.: 1652

2x cont NCIMB Deposit No. 40794, or the complement of the entire length of such first polynucleotide sequence.

Please add the following new claims.

-- 83. An isolated polynucleotide segment comprising: a first polynucleotide sequence, or the complement of the entire length of such first polynucleotide sequence, wherein the first polynucleotide sequence is (a) a reference sequence that encodes the amino acid sequence set forth in SEQ ID NO:2, or (b) is identical with the reference sequence except that, over the entire length corresponding to the reference sequence, the nucleic acid sequence has an average of up to ten substitutions, deletions or insertions for every 100 nucleotides of the reference sequence.

-- 84. The isolated polynucleotide of claim 83, consisting essentially of a polynucleotide of the formula:

$X-(R_1)_n-1 - [PN-SEGMENT]-AA-(R_2)_n-Y$

wherein [PN-SEGMENT] is the polynucleotide segment of claim 70 and wherein, at the 5' end of the molecule, X is hydrogen, and at the 3' end of the molecule, Y is hydrogen or a metal,  $R_1$  and  $R_2$  is any nucleic acid residue, and n is an integer between 1 and 1000.

-- 85. The isolated polynucleotide segment of claim 83, comprising the first polynucleotide sequence wherein the first polynucleotide sequence is (a) identical with the reference sequence, or (b) identical with the reference sequence except that, over the entire length corresponding to the reference sequence, the nucleic acid sequence has an average of up to five substitutions, deletions or insertions for every 100 nucleotides of the reference sequence.

-- 86. The isolated polynucleotide segment of claim 85, wherein the first polynucleotide sequence encodes a Xanthine phosphoribosyl transferase polypeptide.

-- 87. The isolated polynucleotide segment of claim 83, wherein the isolated polynucleotide comprises the complement sequence, which is the complement of the first



Serial No.: 08/896,589  
Group Art Unit No.: 1652

polynucleotide sequence wherein the first polynucleotide sequence which is (a) identical with the reference sequence, or (b) identical with the reference sequence except that, over the entire length corresponding to the reference sequence, the nucleic acid sequence has an average of up to five substitutions, deletions or insertions for every 100 nucleotides of the reference sequence.

-- 88. The isolated polynucleotide segment of claim 87, wherein the complement is of a first polynucleotide sequence which encodes a Xanthine phosphoribosyl transferase polypeptide.

-- 89. A vector comprising the polynucleotide segment of claim 83.

-- 90. A recombinant expression system comprising an isolated host cell or non-human animal transformed with the polynucleotide segment of claim 83 to express the first polynucleotide sequence.

-- 91. A process for producing an Xanthine phosphoribosyl transferase polypeptide of the first polynucleotide sequence comprising the step of culturing the host cell of claim 90 under conditions sufficient for the production of said polypeptide, which is encoded by the first polynucleotide sequence.

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cont.

-- 92. An isolated polynucleotide segment comprising a first polynucleotide sequence, or the complement of the entire length of such first polynucleotide sequence, wherein the first polynucleotide sequence is (a) a reference sequence that encodes the amino acid sequence set forth in SEQ ID NO:2, or (b) is identical with the reference sequence except that, over the entire length corresponding to the reference sequence, the nucleic acid sequence has an average of up to thirty substitutions, deletions or insertions for every 100 nucleotides of the reference sequence, or wherein the first polynucleotide sequence is (a) a second reference sequence which encodes the same mature polypeptide, expressed by the Xanthine phosphoribosyl transferase gene contained in *Streptococcus pneumoniae* 0100993 contained in NCIMB Deposit No. 40794, or (b) is identical with the second reference sequence except that, over the entire length corresponding to the second

Serial No.: 08/896,589  
Group Art Unit No.: 1652

reference sequence, the nucleic acid sequence has an average of up to five substitutions, deletions or insertions for every 100 nucleotides of the reference sequence.

-- 93. An isolated polynucleotide segment of claim 92, wherein the first polynucleotide sequence is (a) the second reference sequence, or (b) is identical with the second reference sequence except that, over the entire length corresponding to the second reference sequence, the nucleic acid sequence has an average of up to three substitutions, deletions or insertions for every 100 nucleotides of the second reference sequence.

-- 94. A polynucleotide encoding a fusion polypeptide having a segment according to claim 92.

-- 95. The isolated polynucleotide segment of claim 83, wherein the first polynucleotide sequence is identical with a third reference sequence which is the sequence from nucleotides 1 to 579 inclusive of the polynucleotide sequence set forth in SEQ ID NO:1, or is identical with the third reference sequence except that, over the entire length corresponding to the third reference sequence, the nucleotide sequence has an average of up to ten substitutions, deletions or insertions for every 100 nucleotides of the third reference sequence, and wherein the first polynucleotide sequence hybridizes under stringent conditions to a polynucleotide of said third reference sequence.

-- 96. An isolated polynucleotide segment of claim 95, wherein the first polynucleotide sequence is (a) identical with the third reference sequence, or (b) is identical with the third reference sequence except that, over the entire length corresponding to the third reference sequence, the nucleotide sequence has an average of up to five substitutions, deletions or insertions for every 100 nucleotides of the third reference sequence.